

1 APPARATUS AND METHOD FOR TREATING CONTAINERIZED
2 FEED MATERIALS IN A LIQUID REACTANT METAL

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ABSTRACT OF THE DISCLOSURE

6 A treatment apparatus (10) includes a liquid reactant metal containment vessel (11) for
7 containing a first liquid reactant metal and isolating the reactant metal from the atmosphere. A
8 release chamber (14) is adapted to receive the first liquid reactant metal from the containment
9 vessel (11) and a submerging arrangement (21) is adapted to dunk or submerge a container (46)
10 of feed material into the liquid reactant metal and move the container to a release location within
11 the release chamber (14). Relatively light materials rising from the submerged container (46),
12 including unreacted feed material, intermediate reaction products, and perhaps final reaction
13 products collect in a collection area (60) having an upper surface defined by an upper surface of
14 the release chamber (14). A treatment arrangement included in the apparatus places the fluids
15 collected in the collection area (60) in contact with the first liquid reactant metal or a second
16 liquid reactant metal for a sufficient period of time to effect the desired reduction reactions.

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